

Remarks

Claims 1-3, and 14-27 have been amended, and new claims 32 and 33 have been added. Claims 1-33 are pending in the application. Applicant respectfully requests reconsideration.

Support for the amendment to claim 1 can be found, for example, in paragraph [0037] of the application. Support for new claims 32 and 33 can be found, for example, in paragraphs [0028]-[0030] of the application.

Claim Rejections Under 35 U.S.C. 101

Claims 14-26 were rejected under 35 U.S.C. 101 for failing to claim statutory subject matter.

Claim 14 as been amended to clearly claim a "computer program stored in a computer-useable media" (emphasis added). Applicant submits that a computer program stored in a computer-useable media constitutes statutory subject matter. Therefore, the rejection of claim 14, and its dependent claims 15-26, has been overcome.

Claim Rejections Under 35 U.S.C. 103

Claims 1-26 were rejected under 35 U.S.C. 103(a) as being unpatentable over Ferre et al. (U.S. 5,967,980) in view of Sumanaweera et al. (6,159,152). Applicant respectfully traverses.

Claim 1 is patentable because neither Ferre nor Sumanaweera, taken either alone or in combination, discloses, teaches or suggests "determining a first rate of correlation loss between the first and second image using the first correlation loss data" and "determining first position data for the second image, relative to the first image, using the first rate of correlation loss" (emphasis added).

Ferre fails to disclose determining correlation loss, much less determining a rate of correlation loss.

Sumanaweera discloses a system and method of registering ultrasound images. To register a first image relative to a second image, Sumanaweera teaches identifying a feature in the first image, correlating the feature with the second image in various relative positions, and selecting the best correlation value (see col. 1, lines 50-63). The relative motion between the two images is estimated by selecting the translation and rotation for the relative position associated with the best correlation value (see col. 1, lines 63-67). However, nowhere does Sumanaweera

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disclose, teach or suggest determining a rate of correlation loss between two images, much less using a rate of correlation loss to determine a relative position between two images, as required by claim 1. Rather, Sumanaweera determines relative position by computing correlation values for various relative positions, selecting the best correlation value, and then selecting the relative position associated with the best correlation value. In other words, Sumanaweera tries out different relative positions by computing a correlation value for each relative position and selects the relative position resulting in the best correlation. Sumanaweera does not determine relative position by computing a rate of correlation loss between two images, i.e., a rate at which the two images lose correlation with each other.

For at least the reasons given above, Applicant submits that claim 1 is patentable, and requests that the rejection of claim 1 be withdrawn.

Claims 1-13 depend from claim 1, and are therefore patentable for at least the reasons given for claim 1.

Claim 2 is additionally patentable because neither Ferre nor Sumanaweera discloses, teaches or suggest "determining a first angle of separation between the first and second images using the first rate of correlation loss, and determining first position data for the second image, relative to the first image, using the first angle of separation" (emphasis added). Rather, Sumanaweera determines relative position between two images by computing correlation values for various relative positions, selecting the best correlation value, and then selecting the relative position associated with the best correlation value. Sumanaweera does not teach or suggest determining a rate of correlation loss between two images, much less using a rate of correlation loss between two images to determine an angle of separation between the two images, as required by claim 2.

Claim 14 has been amended to include limitations similar to those of claim 1, and is therefore patentable for the same reasons of claim 1.

Claims 15-26 depend from claim 14, and are therefore patentable for at least the reasons given for claim 14.

Claims 15 has been amended to include limitations similar to those of claim 2, and is therefore additionally patentable for the same reasons as claim 2.

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Claim Rejections Under 35 U.S.C. 102

Claims 27-31 were rejected under 35 U.S.C. 102(b) as being anticipated by Ferre et al. (U.S. 5,967,980). Applicant respectfully traverses.

Claims 27 has been amended to include limitations similar to those of claim 1, and is therefore patentable for the same reasons of claim 1.

Claims 28-31 depend from claim 27, and are therefore patentable for at least the reasons given for claim 27.

New Claims

New claim 32 and 33 depend from claim 1, and are therefore patentable for at least the reasons given for claim 1.

New claim 32 is additionally patentable because none of the cited references discloses, teaches or suggests "approximating the rate of correlation loss using an exponential function."

New claim 33 is patentable because none of the cited references discloses, teaches or suggests "fitting an exponential function to the first correlation loss data; calculating a derivative of the exponential function; determining an angle of separation between the first and second images using the derivative of the exponential function; and determining the first position data for the second image using the angle of separation."

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Conclusion

Prompt and favorable action on the merits of the claims is earnestly solicited. Should the Examiner have any questions or comments, the undersigned can be reached at (949) 567-6700.

The Commissioner is authorized to charge any fee which may be required in connection with this Amendment to deposit account No. 15-0665.

Respectfully submitted,

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